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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JEFFREY MARK LAFORTUNE

Appeal 2008-002520
Application 10/747,924
Technology Center 1700

Decided: August 27, 2009

Before PETER F. KRATZ, CATHERINE Q. TIMM, and
LINDA M. GAUDETTE, *Administrative Patent Judges*.

TIMM, *Administrative Patent Judge*.

DECISION ON APPEAL

I. STATEMENT OF THE CASE

Appellant appeals under 35 U.S.C. § 134(a) from the Examiner's decision rejecting claims 1, 2, and 4-19. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

The invention relates to an absorbent composite for retaining bodily fluids in disposable articles such as diapers (Spec. 1 and 7). Appellant applies a surface charge treatment that creates optimum repulsive (like) charges between components of the absorbent composite, components such as fluff fiber or superabsorbent polymer (SAP) (Spec. 6). The repulsive forces are said to promote the expansion of the composite resulting in increased void volume and flow channels, and thus improving composite fluid intake rate (Spec. 6). Claim 1 is representative for disposition of the issue on appeal:

1. An absorbent composite that exhibits an improved fluid intake rate, wherein at least one component of said composite is treated to retain surface charges which create repulsive forces between said at least one component upon fluid insult of said composite; wherein the treatment is a coating treatment, a chemical treatment, or combination thereof.

The Examiner maintains, and Appellant appeals, the rejection of claims 1, 2, 4-12, and 15-19 under 35 U.S.C. § 103(a) as unpatentable over McFarland (US 4,604,313, issued Aug. 5, 1986) in view of Sheu (US 5,700,559, issued Dec. 23, 1997); and the rejection of claims 13, and 14 over those same references further in view of Kellenberger (US 5,147,343, issued Sep. 15, 1992).

II. DISPOSITIVE ISSUES

The issues on appeal are:

Has Appellant established that the Examiner reversibly erred in finding that McFarland and Sheu are analogous art, i.e., within the scope of the prior art one of ordinary skill would be charged with knowing?

Has Appellant established that the Examiner reversibly erred in finding a reason to combine the teachings of the references?

We answer these questions in the negative.

III. FINDINGS OF FACT

The following Findings of Fact (FF) are particularly relevant for deciding the issues on appeal.

McFarland describes absorbent composites having at least two nonwoven fabric layers (*see, e.g.,* Fig. 3; col. 1, ll. 6-10). One layer (such as layer 70 shown in Fig. 3) includes a matrix of melt blown polymer fibers entangled with wood or other staple fibers (McFarland, col. 1, ll. 6-10 and col. 6, ll. 10-12). The other layer (such as layer 72 shown in Fig. 3) further contains superabsorbent particles in addition to the entangled fibers (McFarland, col. 6, ll. 10-15; col. 9, ll. 21-69). McFarland exemplifies an absorbent composite in which the melt blown fibers are formed from extruded polypropylene (McFarland, col. 9, ll. 21-31).

The absorbent composites of McFarland are intended to be used in wound dressings, diapers, and incontinent products and are capable of holding large amounts of liquid such as are released in an incontinent adult (McFarland, col. 2, ll. 58-62; col. 3, ll. 24-28; col. 7, ll. 22-27).

McFarland's composite presents a cloth-like surface on one side and a superabsorbent-containing surface on the other side (McFarland, col. 2, ll. 55-58). This allows the placement of the cloth-like surface (layer 70) towards the skin of the wearer while the superabsorbent-containing surface is on the interior of the material during use (McFarland, col. 2, ll. 58-62 and col. 7, ll. 19-20). Because of the presence of the cloth-like surface, the slimy and clammy feel of wet superabsorbent is not felt by the user (McFarland,

col. 3, ll. 24-30). When the fiber layer 70 that overlays the superabsorbent layer 72 is wet, the wetness will spread on the exposed surface layer prior to being absorbed by the superabsorbent layer (McFarland, col. 7, ll. 31-34). This presents a drier surface to the wearer after the superabsorbent layer has absorbed the liquid from the surface layer (McFarland, col. 7, ll. 34-36).

McFarland does not disclose treating any component of the composite to retain surface charges.

Sheu describes treating articles to be used in aqueous environments such as animal fluid environments (Sheu, col. 1, ll. 16-17 and 21-24). The article to be treated, i.e., the substrate, can be selected from a range of geometries and materials (Sheu, col. 1, ll. 25-26). It may be porous (Sheu, col. 1, ll. 26-27). It may be in the form of films, sheets, fibers, particles, or other shapes (Sheu, col. 7, ll. 23-27). It may be a woven or non-woven (Sheu, col. 4, ll. 25-49). It may be a polypropylene fabric (Sheu, col. 4, ll. 29-32).

Sheu's substrate is treated with an ionic polymeric layer, and a polyelectrolyte coating to create a durable hydrophilic surface coating (Sheu, Title, col. 1, ll. 6-7 and 16-19; col. 2, ll. 3-16; col. 3, ll. 18-22). When applied to, for instance, nonwoven fabrics, the coating increases hydrophilicity and water drops are rapidly absorbed or wicked into the hydrophilic surface material (Sheu, col. 4, ll. 33-49).

Sheu discloses forming a wide range of articles from the coated substrates ranging from durable hydrophilic articles having a porous substrate (e.g., medical test strips, implantable drug release devices, filters) to durable hydrophilic articles with particulate substrates (e.g., powders, beads, microcarriers, tablets) to biomedical or biocompatible articles (e.g.,

intraocular lenses or other ophthalmic, prosthetic or implantable articles or devices) (Sheu, col. 2, ll. 49-54). Sheu also discloses that “[t]his invention may also be applied in the food industry, the paper printing industry, hospital supplies, diapers and other liners, and other areas where hydrophilic, wettable, or wicking articles are desired.” (Sheu, col. 5, ll. 62-65.)

Sheu provides evidence that high rates of wicking equate to rapid absorption of water drops (e.g., Sheu, col. 4, ll. 45-47 and col. 8, ll. 30-33).

IV. PRINCIPLES OF LAW

To label a reference as analogous art “merely connotes that it is relevant to a consideration of obviousness under § 103 as ‘prior art.’” *In re Sovish*, 769 F.2d 738, 742 (Fed. Cir. 1985). A reference is relevant where it is either in the field of the applicant's endeavor or is reasonably pertinent to the problem with which the inventor was concerned. *In re Kahn*, 441 F.3d 977, 986-87 (Fed. Cir. 2006).

“The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 416 (2007).

V. ANALYSIS

Appellant contends that McFarland and Sheu are nonanalogous art (Br. 4). The Examiner, however, finds that the references are within the same field of endeavor (i.e., absorbent articles) and, therefore, analogous art for purposes of the obviousness analysis (Ans. 4).

There is no dispute that both Appellant's absorbent composite and McFarlands' superabsorbent-containing nonwoven fibrous material are in the same field of endeavor, i.e., disposable absorbent products such as

dressings, diapers, incontinence products (Br. 5; Spec. 1 and 7; McFarland, col. 2, ll. 58-62 and col. 3, ll. 24-28). Rather, Appellant argues that Sheu is not directed to an absorbent article “in the sense of the present invention and McFarland.” (Br. 5.) According to Appellant, “Sheu is directed to plastic/polymer types of materials that are predominantly [sic, predominantly] hydrophobic” (Br. 5, citing to Sheu, col. 1, ll. 6-7). The Examiner responds that Sheu is directed to treating a variety of articles to make them more hydrophilic, Sheu’s list of articles to be treated are “diapers and other liners” as well as other articles in which it would be desirable to increase hydrophilicity, wettability or wicking ability (Ans. 6, citing Sheu, column 5, lines 62-65).

The evidence supports the position of the Examiner. Column 1, lines 6 and 7 of Sheu cited by Appellant merely indicates that methods were known in the prior art for improving the wettability of polymers, many of which are hydrophobic (Sheu, col. 1, ll. 6-7). This disclosure in no way negates the more far reaching disclosure in Sheu of a myriad of uses and substrates to be coated, nor the specific disclosure that the coating may be applied in “diapers and other liners,” as well as the indication that Sheu’s coating is intended to be applicable “in other areas where hydrophilic, wettable, or wicking articles are desired” (*see* FF above). Sheu further indicates that articles to be treated include those to be used in aqueous environments such as animal fluid environments, an environment the ordinary artisan would understand as including diapers and other such absorbent articles.

We also determine that Sheu would have been pertinent to the problems faced by Appellant and McFarland in forming diapers because a

problem in the diaper art is creating an article that will absorb bodily fluids and keep those fluids away from the skin of the wearer (*see* FF above). Sheu is also concerned with articles that absorb water rapidly (i.e., wick the water away) (*see* FF above).

Appellant has not established that the Examiner reversibly erred in finding that McFarland and Sheu are analogous art, i.e., within the scope of the prior art one of ordinary skill would be charged with knowing.

Appellant further contends that “there would be no motivation to utilize a reference, such as Sheu, which teaches a process to make a hydrophobic item wettable” to modify fibers suitable for the present invention because the invention and McFarland use fibers that are already hydrophilic and wettable (Br. 5, citing Spec. p. 7, l. 27 to p. 8, l. 10 and McFarland, col. 2, ll. 32-34). Appellant also contends that one would not be motivated to utilize a reference which teaches the properties of hydrophilicity, wettability and wickability (Sheu) in order to improve the intake rate of an absorbent composite as desired in claim 1 (Br. 6).

Appellant has not convinced us that the evidence fails to support the Examiner’s finding of a reason to combine. The portion of the Specification cited by Appellant, page 7, line 27 to page 8, line 10, describes a SAP/fluff mixture comprising hydrophilic fibers (e.g., wood fibers), and superabsorbent material. However, it also discloses that other fibers may be included such as hydrophobic fibers (e.g., polypropylene fibers) treated to exhibit hydrophilic properties (Spec. p. 8, ll. 5-6). The claims do not exclude the incorporation of hydrophobic fibers.

The portion of McFarland cited by Appellant, column 2, lines 32-34, describes polymer fibers entangled with wood fibers. Polypropylene

polymer fibers are exemplified by McFarland (FF above). Sheu exemplifies coating a polypropylene nonwoven to increase its hydrophilic properties. Using the coating of Sheu to coat the nonwoven of McFarland appears to be no more than the use of a known coating system for its known function of increasing hydrophilicity for its known predictable result (increasing wetting, and wicking and absorption rate as taught by Sheu).

Moreover, we note the words “improved intake rate” in claim 1 use the relative term “improved” without stating what it is improved relative to. The claim further does not specify that the treatment results in the improvement. The phrase “improved intake rate,” therefore, has little effect on the scope of the claim. Furthermore, we find that Sheu provides a sufficient reason for applying the coating to the nonwoven composite article of McFarland for increasing hydrophilicity, wetting, and wicking. Those properties are desirable in an absorbent pad such as that taught by McFarland.

Appellant has not established that the Examiner reversibly erred in finding a reason to combine the teachings of the references.

Appellant does not advance any additional arguments against the rejection of claims 13 and 14 which further relies upon Kellenberger.

VI. CONCLUSION

Appellant has limited the scope of the arguments to the above issues and does not further contest the Examiner’s rejections of the claims. Therefore, we sustain the rejection of claims 1, 2, 4-12, and 15-19 under 35 U.S.C. § 103(a) as unpatentable over McFarland in view of Sheu; and the rejection of claims 13, and 14 over those same references further in view of Kellenberger.

VII. DECISION

The decision of the Examiner is affirmed.

VIII. TIME PERIOD FOR RESPONSE

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(v).

AFFIRMED

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